Studies in Economic History

Andrés Álvarez
Vincent Bignon
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Money Doctors Around the Globe

A Historical Perspective

Springer

Studies in Economic History

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Preface

This book has evolved from ongoing discussions among researchers who share common research interest on "money doctors" in history and have been gathering at conferences and workshops since 2014.

This project commenced in September 2014, initiated by the co-organizers who convened the first workshop in Lund to prepare for a session at the XVII World Economic History Congress (WEHC) in Kyoto in 2015. Since then, our focus has been on investigating the history of money doctors engaged in addressing practical monetary and financial issues of a country. We organized sessions at subsequent WEHC meetings as well as onsite and online workshops. In 2018, we conducted a session on "Crises, money doctors, and reforms: Critical moments in the development of modern monetary systems" at XVIII WEHC in Boston. In 2022, we held another session on "Crises, money doctors and reforms: Is the new monetary technology a resource or a curse?" at XIX WEHC in Paris. We held onsite meetings hosted by Banque de France in 2018, 2019 and 2023. During 2020–2022 when the COVID-19 pandemic prevented onsite gatherings, we sustained our discussions through monthly or bi-monthly online meetings.

Most chapters of this book were presented and discussed at the latest workshop held at the Paris venue of Banque de France in October 2022. We extend our gratitude to Banque de France for generously providing us with a venue for meetings and financial support. We appreciate the efforts of all contributors to the volume for bringing this out, participants at conferences and workshops mentioned above for their invaluable comments and discussions. Last but not least, we would like to thank Tetsuji Okazaki, series editor of the Studies in Economic History book series and the editorial board members of the book series as well as Juno Kawakami, the editor at Springer, who has dedicated herself to ensure the publication of this book.

Bogota, Colombia — Andrés Álvarez
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Fiat Copper Money and Trust: Monetary Campaign of Alexei Mikhailovich (1654–1663)

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Abstract Prior to the introduction of paper money, monarchies devised innovative strategies to meet their financial needs. The issuance of copper currency at enforced exchange rates as the monetary campaign of Tsar Alexei Mikhailovich of Russia (1654–1663) deserves further investigation. The prevailing literature often highlights the fiasco accompanied with agio and hyperinflation. A better understanding of these initiatives can be achieved through a framework of trust, as expounded by Aglietta and Orléan. Trust, in this context, operates in three levels: as societal norms and conventions, as public trust in governing authorities, and as an interplay among sovereigns. This framework reveals that inflation correlates with a decline in trust, challenging the efficacy of both the State Theory of Money and monetarism. The various facets of trust shed light on the successful aspects of these monetary operations in mobilizing resources. However, short-term successes, leading to misguided expectations can be seen as a "trust trap." Notably, the monarchy's failure to recognize the new currency constituted a mistrust. The ease of achieving objectives incentivized reliance on credit, rendering the system more fragile. The lessons learned from this endeavour, attributed to Afanasy Ordin-Nashchokin, helped the subsequent monetary reforms of Peter the Great.

I express my gratitude to all those who participated in the discussion of an earlier version of this paper at the workshop Money Doctors' organized by Anders Ögren on 15 June 2022, at a session on the World Economic History Congress in Paris 2022, at Money Doctors' book project session 22 March 2023 in Banque de France, Paris, at Baltic Connections: a Conference in Social Science History, 7 June 2023 in Helsinki and at Ronald Coase Institute Alumni conference, 27 August 2023 in Frankfurt. The idea to study seventeenth century monetary thinking originally came from collaboration with Jérôme Blanc and Ludovic Desmedt on the History of Pre-modern Monetary Thought of 1517–1776 (see Raskov, 2014).

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1 Introduction

The lessons of the monetary campaign of Alexei Mikhailovich Romanov (1654–1663), the Tsar of Muscovite Russia, have not yet been given due consideration. Improvements in the money emission of that time—at times chaotic, and at other times consistent—have been subject to quite a few historical studies: the course, dating, reasons and drivers of the reform have been restored on the basis of scarce archival records (Brickner, 1864; Bazilevich, 1936; Spassky, 1960; Mel'nikova, 1989; Efimov, 2019; Lyapin, 2020). Even so, the institutional reasons for the short-run success and the subsequent failure of this monetary campaign on substituting silver by copper were rather neglected.

The experiments involving the issuance of copper money as a replacement of silver constitute a subject of scholarly interest. In this era, silver dominates, while gold is of great importance for store of value and awards. In contrast, copper as a less valuable and soft metal often functioned as a medium facilitating small transactions (in particular, in Spain, Austria, and German states). A noteworthy exception can be discerned in Sweden where a sort of bimetallism persisted from 1624 to 1776, with silver and copper being simultaneously used as monetary standards, with copper plates weighed from 0.5 kg to 20 kg. The issuance of copper currency, at times, became a mechanism employed to address fiscal deficits during the wars. The fiduciary monetary campaign of seventeenth century Moscow was exactly such an early attempt to experiment with copper money bore a mandated face value.

The logic of the subsequent sections is as follows. Section 2 reveals the causes and the successive steps of the monetary campaign that was finally limited to the partial substitution of silver coins by copper ones. The discussion on the origins of fiat money in Sect. 3 enables us to build a theoretical framework based on the issue of trust, in terms of which the habit and the perception of authorities take on a central role. Section 4 is aimed at revealing the role of habit in the short-term success in minting copper coins with forced value which were initially "as good as silver ones." Finally, the government actions undermining confidence are explored in detail in Sect. 5.

2 The Monetary Campaign in the Reign of Alexei Mikhailovich (1654–1663)

2.1 What Were the Problems to Be Solved?

The characteristics of the mid-seventeenth century demand attention. Frequently, transformations in coinage during this period are labeled as reforms, or monetary reforms. However, it is crucial to recognize that the concept of reform, especially within the context of political and economic shifts, only fully crystallized in the nineteenth century (Tribe, 2023). A reform typically involved planning, deliberation,

and well-defined objectives for the proposed enhancements. However, people living in the seventeenth century often characterized these events differently, referring to them as "sprava" (correction), campaigns, or operations. Frequently, there was a lack of personal identification, and the authorship of these projects, campaigns, or changes remained sometimes unknown. If the outcomes were favorable, credit was ascribed to the monarch, but if not, a figurative "scapegoat" such as thieves, counterfeiters, or traitors was identified—individuals seen as deliberately undermining the invariably noble intentions of the monarch. Our endeavor is to bring clarity to actions that were frequently influenced by external circumstances. Nevertheless, these actions themselves offer valuable insights and serve as a lesson to prevent future mistakes. The consequences of certain decisions allow us to diagnose and comprehend the progression of the "ailment" and seek remedies for adverse effects. In this context, historical events assume the role of a collective money doctor for earlier periods in history.

So, what were the reasons for taking a new approach to issuing money in the Muscovite Russia during the reign of Alexei Mikhailovich (Bazilevich, 1936; Spassky, 1960, 116–118; Mel'nikova, 2004, 28)? Firstly, the need for an urgent monetary campaign was motivated by an acute deficit of money for leading a war with Kingdom of Sweden (1656–1658) and the Kingdom of Poland and the Grand Duchy of Lithuania (1654–1667) (see the results on the map on Fig. 1), therefore, for paying out wages to servicemen. The beginning of the reform coincided with active hostilities. Secondly, the need to align the archaic monetary system with the Western European system directly contacted by Muscovy in Ukraine where thaler served as a basis of the payment system, became more pressing. Thirdly, the character of the campaign was influenced by such a distinctive feature of the then Russian monetary matters as total dependence on imports of raw materials, in silver and in copper in particular. Silver came in the form of *Joachimsthalers*. The easiness of buying copper in Sweden in 1656–1661 had a certain impact on the course of changes (Bazilevich, 1936; Spassky, 1960, 116–118; Mel'nikova, 2004, 28). The fact that the production of copper in Sweden peaked in the 1650 s and steadily exceeded 2000 tons per year, setting stock prices in Amsterdam, is no mere a coincidence (see Wolontis, 1936).

The monetary system of Muscovy hinged exclusively on silver wire kopecks that weighed less than 0.5 g by 1654. Silver kopecks were not yet coins but flattened pieces of wire. Nuisance for all types of transactions was obvious. Small slippery coins stick between the fingers so it was necessary to keep a special staff of people in charge of counting. Jacob Reutenfels noted that, for the money was quite small, "*the common folk kept (it) in the mouth so that they all too often speak with a hundred of kopecks in their mouths, although quite freely* (Reutenfels, 1997, 340)".

2.2 *Coinage Innovations: From Silver to Copper Coins*

The monetary system of Muscovy became to operate multiples of ten and hundred rather earlier. One rouble was equal to 100 kopecks even before the unification of

Fig. 1 The tsardom of Russia in the seventeenth century

Fig. 2 Efimok with marks

currency circulation by Elena Glinskaya in 1535. The convenience of counting went hand in hand with a lack of both small change and large denominations. The first stage of the so-called reform of Alexei Mikhailovich dealt with large denominations—along with recoinage, when a thaler bought in exchange for 48–50 kopecks was turned into coins with a par value of 64 kopecks, the so called *efimki*[1] *or efimki with marks* (Fig. 2). There was also a temporal attempt to mint a one rouble coins from the same thalers with a debasement of 100%. One side of such coins was stamped with the year, and the other side with a symbol of the monarch's power.[2] A new silver denomination equal to one fourth of a thaler, that came to be known as *polupoltinnik*,[3] valued 25 and later 16 kopeks, emerged as well (Fig. 3). This means that a thaler was split into four pieces, and each fourth was stamped with the signs of polupoltinnik.

The memo on the collection of state revenues in new silver and copper coins dated 3 March 1656 and addressed to the Vyatka Customs states as follows: "*by sovereign decree, rouble silver efimki were introduced, as well as countermarked efimki, quarters-polupoltinniks, copper poltinniks, altynniks, grosheviks, copper kopecks and dengi"* (AAE, 1836, 130). The start was rather ambitious as it was planned to introduce eight new denominations from silver and copper but, as we will show below, the campaign was scaled down to mass issuance of copper kopecks to replace silver ones. The Moscow mint started to coin from copper *altyns* (3 kopecks), *grosheviks* (2

[1] *Efimok*—the Russian name for a silver coin, the Joachimsthaler. A Russian silver rouble (100 kopeks) and "efimki with marks" valued 64 kopeks were minted in 1654–55. At the beginning of 1659, *efimki* were forbidden to circulate.

[2] According to Bazilevich's archival research, on May 8, 1654, it was ordered to re-mint 893,620 thalers into roubles, an in June 1654, they began coining silver rouble efimki, silver polupoltinniks and copper altynniks (Bazilevich 1936, 9, 18).

[3] *Polupoltinnik*—a quarter of rouble, it was a European thaler chopped into four pieces. A value was 25 kopeks and then 16 kopeks as one fourth of *efimok* of 64 kopeks.

Fig. 3 Polupoltinnik, a quarter of rouble

kopecks), *kopecks* and *dengi* (half copecks). Technical failures did not allow to organize the issuance of copper coins with large denominations[4]—they were forced to turn from round coins back to minting flattened pieces of copper wire—*kopecks* and *dengi*. Silver *efimki* were issued only in 1655–1656, while foreigners were banned from using them. The reason is obvious—there was a desire to continue exchanging thalers for 50 kopecks and deriving seigniorage revenues. New silver coins (efimok) have not been accepted by the population, and the coins were withdrawn from circulation by 1659. The debasement of 100 and even 28% was a sensitive issue. The merchants did not want to accept such a debased silver coins.

Thus, due to technical difficulties and the lack of trust to new large nominations, the main efforts of the four mints—in Moscow (the English Mint), Novgorod, Pskov, and Kukenoys[5]—became limited to minting copper kopecks. Once more, changes in coinage were not well planned in advance, there was not equipment as well as trained personnel matching the intentions, that is why most changes remained unrealized or badly realized attempts. A significant part of efforts was limited to issuing small coins—kopecks, flattened pieces of copper wire, that were quite easy to counterfeit. The attempts to pass copper kopecks off as silver ones, were also doomed to failure although not at once but after ten long years during which the authorities hardly resorted to extraordinary indirect taxes, such as *pyatinny sbor* when tradesmen and merchants were to pay one fifth of their liquid capital.

Gradually, the English Mint began to work around the clock, turning into the largest enterprise in Moscow with a staff of almost 500 employees. As estimated by some contemporaries, this made it possible to coin about 2 billion copper coins during the entire campaign.

[4] The most well-run was the production of polupoltinniks or quarters, as they coined 151,030 of them and only 2,065 rouble efimki during June 1754 (Bazilevich 1936, 19).

[5] Currently, the Latvian town of *Koknese*. In a map it is mentioned as *Kokenhausen*, a Swedish name.

2.3 Who is Considered a Money Doctor?

An attempt to improve and develop the monetary system took place during the reign of Alexei Mikhailovich, so the campaign itself, like military operations, is historically associated with the monarch's name. Nobody knows who was behind the rather extraordinary decision to issue fiduciary copper money with a forced exchange rate, or fiat money, worth approximately 1.2% of corresponding silver coins. It was a way to solve the fiscal problem of debts and the lack of funds in the Treasury, as well as the general deficit of money to trade with. The problem of the originator is aggravated not only by the fact that, following numerous fires in Moscow, the relevant documents have not yet been found but also by the fact that the reform turned out to be a dismal failure blamed on abstract counterfeiters by the authorities in order to save the real organizers from people's wrath. Basilevich, who studied this period and dedicated a separate book to this monetary operation, believed that the issue of the author "*cannot be finally resolved*" (Bazilevich, 1936, 12).

Contemporaries called Fyodor Mikhailovich Rtishchev the originator. So, in the memoirs of his trip to Moscow in 1661, Baron August Meyerberg calls him "the manager of all the coinage in the State," explaining that he "is considered the main culprit in the minting of copper money, which completely removed gold and silver money from circulation, inflicting a heavy loss on everyone", adding that nobody knows what his fate will be with such riotous people (Meyerberg, 1874, 169). Others rumored that it was Patriarch Nikon who was involved in the transformation of the monetary system.

The evidence of written proposals for coinage of copper money by Afanasy Lavrentievich Ordin-Nashchokin (1605–1680), Russian Duma nobleman and diplomat, seems to be the strongest. The following entry has been preserved during the transfer of the papers of the Secret Office following the death of Alexei Mikhailovich:

> The notebooks, sent by Duma nobleman Ofonasei Lavrentievich Ordin-Nashchokin, on the reinforcement of the troops in the regiments by freeholds and estates and the number of households to provide conscripts and reiters, and on the amount of money to be allotted for their annual maintenance and the use of copper money (for) the same military people (RIB, 1907, 51–52).

This undated document clearly shows the secret or covert nature of the operation. Furthermore, it shows that the main purpose of the proposal to issue copper coins is to make payments to the military. It is known that during this period, officers with their subordinates from European armies were actively recruited into the Russian army. For further interpretation, we will outline a theoretical context useful for the subject.

3 Fiat Money and Trust: What Does Theory Say

Historical accounts of one of the early attempts to introduce money devoid of intrinsic value requires a non-trivial theoretical approach. The two extreme approaches will provide a too straightforward interpretation of the available facts. Monetarists will attach great importance to the relationship between the expansion of the money supply and the level of prices, or inflation. In the long term, we will indeed observe an increase in prices, or, as they used to say, the expensiveness of goods. The vector of movement will be indicated correctly, but the precise historical dynamics, as well as the timing of the system's collapse will remain unspecified. Another extreme is the state or charter theory of money, according to which state guarantees automatically solve the issue of the legitimacy and circulation of money.

As trust is central to the nature and actual functioning of money, we suggest taking a mid-path and considering factors impacting people's trust in money. It is true that money as a social institution is based on confidence, or in the willingness to accept, use and store money. The legitimacy of money is most often secured by the state, but its acceptance is never for granted. No one may be forced to recognize money, there is always room for a refusal. The state—including monarchy or kingdom—may guarantee money as a medium of exchange but thrusting money on someone is beyond its power. This was clearly understood by W. S. Jevons who believed that habit and social convention resist any government measures: "*Over and over again in the course of history, powerful rulers have endeavoured to put new coins into circulation or to withdraw old ones; but the instincts of self-interest or habit in the people have been too strong for laws and penalties*" (Jevons, 1896, 78).

More institutional concept is more relevant in this case. We are relying on Michel Aglietta and André Orléan who stated: "*the deficiency of the state becomes obvious when it struggles to artificially regain confidence in money but fails to do so: even the threat of guillotine never succeeded to halt a mass refusal to accept banknotes*" (Aglietta & Orléan, 2002).

Any monetary reform or change is undertaken by authorities, its legitimacy is not absolute. Aglietta and Orléan have contributed to looking at the issue of confidence in money from a new perspective. The sovereignty of a state is limited by the sovereignty of individuals and other states. The issue of what money is cannot be resolved once and for all. On the contrary, money is always related to imitation and unanimity, which gives rise to uncertainty and make people be in a permanent search for real wealth and a medium recognized by everyone. Any centralization is threatened by the risk of fragmentation. Various forms of money always co-exist and compete in a society. Aglietta (2002, 2016) with Orléan, Ahmed and Ponsot suggests distinguishing between three forms of confidence or trust: methodical, hierarchical, and ethical. The *methodical or routine* form is based on common use including a mechanism of reproduction of past experiences, i.e. on quotidian repetition, comfort and habit. *Hierarchical confidence* is dependent upon the recognition and legitimacy of the authority (or central bank). In its turn, this legitimacy may be conditioned by custom, religion or democratic institutions. Political power enables to make and

change the basic rules of interaction, with the success of changes dependent upon the perception of authority in a society. Finally, the last form, i.e. *ethical confidence*, reveals that any power over money is limited as the power of each state is challenged by the power of other states.

The symbols of power are an influential source of hierarchical confidence. In particular, these are images typically seen on coins such as a horseman spearing a snake. Faith in the monarch is never constant; it depends on religious, social or economic developments. The absolute confidence on the part of the country's entire population would have provided absolute freedom in the monetary policy.

Trust is influenced by *the actions of the ruler* who assumes certain obligations. The more the proclaimed objectives correspond to the practice of reform and/or the more irreversible the reforms are and/or the more successful the other reforms are and/or the weaker the opposition is, the larger the degree of this confidence is. By instance, North and Weingast (1989) showed, the limitation of the ruler's power by a well-balanced decision-making system (through parliament or independent court) also adds to the confidence on the part of merchants and moneymen.

The economic history of the supreme authorities' actions has been well studied. The other dimension of confidence, not always directly dependent on the ruler's actions but associated with perceptions and actions of private individuals who could both create private money (Hayek, 1976) or refuse to recognize new money, has been devoted much less attention.

Counterfeiting is a challenge for the confidence. As Desmedt and Blanc (2010, 328) pointed out: "*counterfeiting was mostly done by individuals seeking a profit by means of the gap between the current value of genuine coins and the output cost of counterfeits*". Counterfeiting provokes dangerous competition with the sovereign and gives a spur to minting in order to preserve the monarch's revenue. In other words, an increase in the number of false coins could cause an increase in the money supply. Competition between the counterfeiters' rent and the ruler's seigniorage gets particularly sharp when the currency issued has a weak protection. This framework of trust helps us to present both the short-term success of the monetary campaign and its total fiasco.

4 Habit or Short-term Success of Fiat Copper Money

A dispute about the source of money's value goes back centuries—what determines the value of a coin: the price of the metal or the sovereign's signature (the monarch's word)? Those who admitted the symbolic value of money determined by the state came to be known as nominalists, and their opponents were called mentalists. Or in another way—chartalism against commodity theory of money. The perception of new red money was ambivalent but more positive in the beginning.

In Ukraine, they were used to active thaler circulation, and the population was not receptive to new red coins.[6] Copper was difficult to use there in purchasing food. As a historian Sergey Solovyev in the dialogue between Hetman Vygovsky and Colonel Pushkar from Poltava:

> When Vygovsky, who did not, or was unwilling to, understand the meaning of copper money, asked: "What this money is? How to accept it?", Pushkar replied: "Even if His Majesty is so kind as to cut and send us paper money with the name of His Majesty on it, I will be pleased to accept the sovereign's reward (Solovyev, 2001, 255).

Ivan Pososhkov[7] the author of "Book on Scarcity and Wealth", also sounded as Pushkar and a nominalist when he wrote:

> …it is not copper that is dear to us but his sovereign name, for the sake of which we disregard its weight but consider the face characters… for we have the most powerful and wholehearted monarch who is neither an aristocrat nor a democrat. And for the sake of it, we neither worship silver nor respect copper but His Majesty's name confers honour and power on us.
>
> (Pososhkov 1937, 313–314)

A habit in using money was quite stable. A thorough reconstruction of the course of introducing new monetary denominations clearly shows adherence to habits. The re-minting of European thalers into Russian coins of large denominations had to be given up pretty soon, as it was too obvious that thalers were exchanged for 50 kopecks each, while they asked for 28% and even 100% more for a coin of the same weight or cut into four pieces. Traders were used to treating coins of this weight as equal to 50 kopecks. At the same time, and quite surprisingly at first glance, the risky project of replacing silver with copper breezed through at first, albeit the cost of copper was 60–100 times less than silver, i.e. the difference could reach up to 10,000%. Such was the income of the Treasury, counting out the costs of coinage.

Indeed, copper money has been quite smoothly circulating along with silver money for several years, it was used to pay wages, there were neither sharp increases in prices nor premiums for exchanges copper coins into silver ones. What is more, no additional taxes had been imposed for quite a protracted period, notwithstanding the growth of military expenses. These innovations alleviated the direct burden of merchantry and peasantry and allowed to hire the army.

Kotoshikhin even indicated that this money had been loved and treated alike: "And after that, small copper coins were issued, and those small coins circulated at par with silver coins for a long time and got loved by the whole state so that all sorts of people accepted and gave them out for goods" (Kotoshikhin, 1859, 82).[8] Solovyov (2001, 250) noted that "in 1657 and 1658, *these coins were actually as good as silver ones*".

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[6] Spassky (1960, 150) also saw previous habits as an obstacle to accept new fiat coins: "this Polish coin, habitual for the people, remained the leading one in the currency circulation of Ukraine".

[7] Yurai Krizhanich had an opposite view. He considered seigniorage to be unjust and sinful, comparing it with a mortal measure of despair. A financial distress, the country's devastation, a slackening of trade—these are just a few consequences described by Krizhanich (1997, 28).

[8] See also (AAE, 1836, 192).

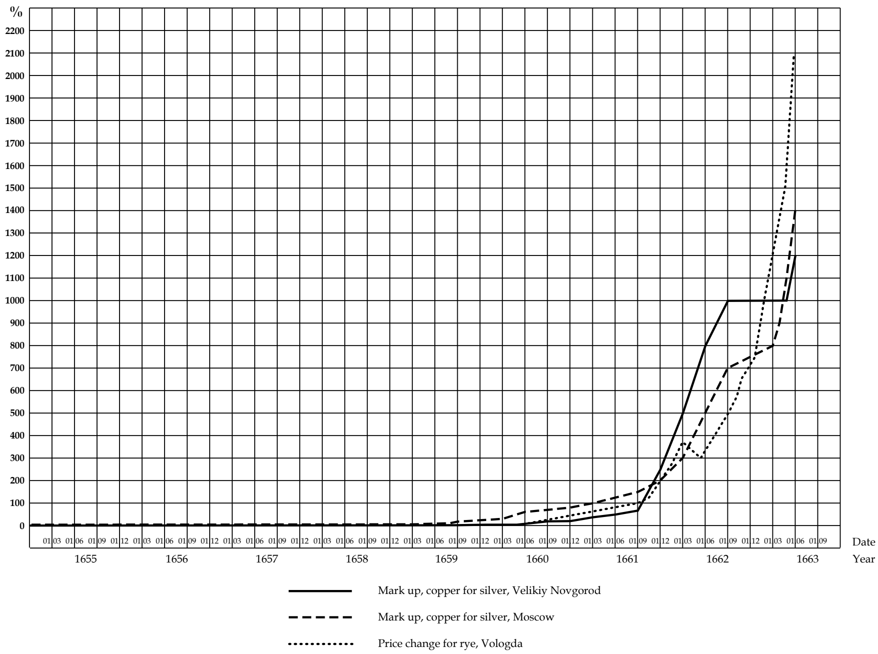

Fig. 4 Mark up of copper for silver and price change for rye, %

The agio for exchanging copper money into silver money exceeded 4% only starting from 1659. There are grounds to believe that it reached 30% in Moscow already by the beginning of 1660. The stability of the initial years—1655, 1656, 1657, 1658—is explained partly by the fact that copper money was in high demand on the market and required to service settlements and exchange (see Fig. 4). The relative stability of the first four years of the reform, a reduction of the direct tax burden on merchantry and peasantry and an unprecedented increase in the monarch's revenue should be treated as the reform's success.

5 Copper's Failure: Government Actions and Expensiveness

5.1 Copper and Silver. Agio

However, starting from the end of 1659, an agio, i.e., a market surcharge on payments in copper money, came into existence (See Table 1 and derived from it Fig. 4).

As shown in Table 1, the premium on copper money occasionally varied to a great extent in Moscow and Veliky Novgorod. The two cities demonstrated similar

Table 1 Agios in exchanging of copper money into one silver rouble[9]

Veliky Novgorod	%	Moscow	%
1 September 1658–1 March 1659	3	1 September 1658–1 March 1659	4
1 March 1659–1 September 1659	5	1 March 1659–1 July 1659	8
		1 July 1659–1 September 1659	10
1 September 1659–1 January 1660	8	1 March 1659–1 June 1659	15
		1 December 1659–1 March 1660	30
1 January 1660–1 May 1660	12	1 March 1660–1 June 1660	60
1 May 1660–1 September 1660	20	1 June 1660–1 September 1660	70
1 September 1660–1 December 1660	25	1 September 1660–1 December 1660	80
1 December 1660–1 March 1661	40	1 December 1660–1 March 1661	100
1 March 1661–1 June 1661	50	1 March 1661–1 June 1661	125
1 June 1661–1 September 1661	70	1 June 1661–1 September 1661	150
1 September 1661–1 December 1661	250	1 September 1661–1 December 1661	200
1 December 1661–1 March 1662	500	1 December 1661–1 March 1662	300
1 March 1662–1 June 1662	800	1 March 1662–1 June 1662	500
1 June 1662–1 September 1662	1000	1 June 1662–1 September 1662	700
1 September 1662–1 May 1663	1000	1 September 1662–1 March 1663	800
		1 March 1663–1 April 1663	900
		1 April 1663–1 May 1663	1100
1 May 1663–15 June 1663	1200	1 May 1663–15 June 1663	1400

trends, however the levels at the beginning and at the end of the period were higher in Moscow. The agio of 1400% in the period from 1 May till 15 June in Moscow means that one had to pay 14 roubles extra for one silver rouble, i.e. one silver rouble passed for 15 copper ones. According to Meyerberg, following June 1663, one silver rouble passed already for fifty copper pieces (Shtorkh, 1868, 775) (Fig. 5).

Prior to the abolishment of copper money, everything became extremely expensive. One may speak of hyperinflation. Agricultural products and other primaries were rising in price at a particularly high pace. In 1660–1662, consultations with merchants and tradesmen were held but there is no mentioning of copper money as the reason. Failed crops, the use of bread for producing vodka, speculations, monetization of payments were the reasons singled out by tradespeople (Efimov, 2019). Such conclusions are also consistent with the proposals to fight the expensiveness. A reduction in alcohol production was meant to increase the supply of bread and put a downward pressure on its price. It was further proposed to pay part of salaries in kind in order to reduce the supply of money. Merchants were forbidden to come to Siberia only with copper money but without goods in order to increase the stock of

[9] For Moscow, see (PSZ, 1830, N 339, 578–579); and for Veliky Novgorod (AAE, 1836, 192–193). See also (Bazilevich, 1936, 45).

Fig. 5 Copper copeck of Alexei Mikhailovich

commodities there. Such measures apparently did not help, and prices continued to grow.

Until the end of 1662, prices for rye in Vologda, as shown by Suvorin (1860), grew somewhat lower than the exchange rate of copper money versus silver. As seen from the graph (Fig. 4), in 1663, the price for rye outpaced the depreciation of copper money. In May 1663, the price for rye increased to 25 roubles from 1 rouble 20 kopecks as of September 1661, i.e. demonstrated a more than 20-fold increase. Prices for vodka and salt did not rise that much. While the authorities saw the reason for the increase in prices in the misbehaviour of merchants, or in the greed of counterfeiters, the analysis of their own actions cannot conceal what is obvious—the government actions undermined confidence in the new copper money.

5.2 Government Actions Undermining Confidence

The central government prescribed to accept silver and copper money drawing no distinction between it. At the same time *prikazy*—main administrative bodies of this time—themselves did not show confidence in copper money. The people were to make no distinction while the authorities clearly made such a distinction. Partly it was inevitable because of the differences between local regions and even bigger differences in domestic and foreign trade. Copper money was discriminated on several levels.

The government preferred silver money and at some point decreed to pay taxes and other levies in silver coins, there was practically no free exchange of copper money into silver, the circulation of new copper money in Siberia and in foreign trade was banned. In December of 1655, it was decreed to pay for vodka and beer with small

silver coins (Bazilevich, 1936, 29). The charter to the Head of Customs Bezhetsky dated 28 July 1656 prescribed to collect two thirds of state revenues in silver and one third in copper, wages were paid in copper, while silver was demanded "for barrelhouse drinking, tzar's goods, duties and taxes" (see Brückner, 1864, 21–24). The decree of April 8 of 1657 although was directed to accept new copper money everywhere "without any doubt"—to the Treasury, in exchange for goods, at the customs, as payment of duties, spatial and temporal limitations were set at once: copper money was forbidden in Siberian towns and it was not accepted in payment of old debts (PSZ, 1830, 204: 421–422).

It was unprofitable for the Treasury to accept copper money in Siberia where a different currency was commonly used, i.e. furs. By the charter of 1657 to Ilimsky Ostrog the Governor of Town Buynakov was directed not to trade in Siberian towns using copper money and to contribute tax payments and transit dues in silver money (Demmeni, 1887, 3). Another restriction concerned trading with foreigners who were the only suppliers of silver as Muscovy had no mines of its own. It was prescribed to trade with foreigners using small silver coins and not copper ones (Demmeni, 1887, 3). The copper money was in fact limited to domestic circulation in central regions since in Siberia they were banned and considered a mean of expensiveness while in more western parts local peasants did not like to take new red coins. John Hicks would called it "local currency" (Hicks, 1969, 90–91).

5.3 Thieves' Money

In the charter dated 8 July 1663, it was declared that due to a fall in prices and revealed abusive minting practice copper coins would be withdrawn from circulation (PSZ, 1830, N 344, 580–581). The main message of this charter was the phrase "*everything got more expensive because of thieves*", it explained that copper money had devaluated due to abusive conduct and theft and even described the merciless punishment of such "money thieves" by pouring molten tin down their throats, cutting off their limbs, whipping or exiling to remote towns. It is no doubt that counterfeiters contributed to accelerating copper money devaluation. Even so, a desire to form a sustainable narrative of linkage between expensiveness and theft, expensiveness and counterfeiters is all too obvious. It seems as if the charter itself puts everyone off the scent and closes the case: the guilty are announced and punished.[10] Wages are now paid in silver money—the wrong was righted. In exchange for one copper rouble the Treasury offers two silver *denezhki*, i.e. swaps silver for copper at a rate of 1:100, which, as we showed above, is even less than the real value of copper. It

[10] In other cases, ordinances offered a ready-made narrative explaining the growth of prices as well. The reason for the rise in prices is not the depreciation of money, but the actions of merchants who bring copper money to Siberia instead of carrying goods, and the shortage of goods in its turn provokes a rise in prices. At the same time, one of the ordinances labels purchasing furs in Siberia for copper money as theft (Dopolneniya, 1851, 275–76; AI, 1842, 327–329).

was prohibited to store copper money which was to be either exchanged or melted down.

The withdrawal of copper money from circulation on 8 July 1663 and the riot on 25 July 1662 stand almost one year apart. One must agree that the name Copper Riot proves to have no basis in fact. This riot was caused by dissatisfaction. There are more reasons to believe that the outrage was provoked by the extraordinary *pyatinny sbor* (one fifth taxation) and general impoverishment due to inflation. On that very day, proclamations of treason were posted everywhere, urging to punish the traitors who had misadvised the monarch on purpose. Copper money was not even mentioned. The uprising was put down with a heavy hand on the same day. The official account talked of a revolt, theft, uprising and ignorance as well as of the severe punishment of "bad people" (Zertsalov, 2020). This riot was called the Copper Riot later on, by analogy to the Salt Riot.

These observations concerning discursive ties between the failure of copper money and theft and a certain exaggeration in the interpretation of the 1662 uprising as the Copper Riot still do not imply that there was no counterfeit money and the riot was not related to copper money in any way. We are rather referring to more correct emphases and a better understanding of all that is happening and the remaining historical narrative shaped in no small degree by decrees and official accounts.

There is much independent evidence available concerning "thieves" money. Extreme cruelty could do nothing with "the irresistible charm of a get-rich-quick scheme". Craftsmen, sworn-men, noble men close to the monarch—quite a many of them were engaged in illegal minting. According to Meyerberg, Ilya Miloslavsky, the monarch's father-in-law, alone minted one hundred thousand roubles for himself. Counterfeit copper money added to undermining public confidence as they were practically no methods to discern a false coin. Technically, counterfeiting presented no difficulty as it could be accomplished by hand using copper wire. The only remaining issue was to imitate or buy a master stamp. The increasing amount of "thieves" money reduced the monarch's revenue and forced intensified minting of copper coins. As a consequence, the mints in Moscow, Novgorod and Pskov worked day and night. According to Bazilevich (1936, 25), the English Mint employed over 500 men, which made it one of the then largest enterprises in Moscow.

The Code (*Ulozhenie*) of 1649 stipulated that minters counterfeiting or debasing money through adding tin or plumber were to have this metal poured down their throat (Demmeni, 1887, 1). In 1661, sanctions were extended to all possible money counterfeiting operations. Punishment became diversified: cutting off the left hand and both feet for producing master stamps, cutting off the left hand and the left foot for minting using others' master stamps, cutting only the left hand for hosting counterfeiters and selling copper (Lakier, 1853, 267).

Grigory Kotoshikhin observed the process of minting in person when serving at the *Posol'skii—or Ambassadorial Prikaz*. In 1663, he ran off to Sweden and described everything he knew about Muscovy in a book. In his opinion, the reason of failures was the fact that peasants and the service class had not recognized the new money. Peasants stopped carrying hay, firewood and foodstuffs to towns so the military had

to buy themselves goods at a double price, which gave rise to scarcity and expensiveness. Counterfeiting and wide spreading of false coins, further increasing prices and mistrust, became a greatest problem. Kotoshikhin mentions some occurrences of stealing dies and counterfeiting through coin clipping. Even the most severe punitive measures were of no help. The monarch was unable to guard the people against counterfeits. Mint employees were compelled to kiss a cross, stripped naked and examined, tortured in case of suspicions, and punished by pouring molten tin down the throat, cutting off hands or ears, and whipping, with some having been deprived of their houses and exiled to Siberia. Still nothing helped, minters built themselves new stone or wooden houses, purchased expensive clothes, "food supplies" and "silver vessels" (Kotoshikhin, 1859, 81–82).

The easiness of forgery and high profits paved the way to counterfeiting. Counterfeiting seems to have occurred at all levels: administrative bodies, boyars (contemporaries suspected Ilya Miloslavsky, Vasily Shorin and Ivan Matyushkin), as well as those directly engaged in coinage. Coins could be produced right at the mints out of under-the-counter copper or master stamps, dies and stamps could be used, with copper coins being worse than the original in the latter case. Actions, executions, and the strengthening of controls indicate that this phenomenon was widespread. A common belief that those close to the monarch or involved in coinage can enrich themselves contributed to the atmosphere of mistrust.

5.4 Consequences for the Monetary Reform of Peter I

The attempt to introduce copper coins was not unique. It is interesting to follow the consequences to the partly similar reform of Peter I (1698–1724). The driving forces for the reform of Peter I were the same as in the middle of the seventeenth century as the system remain archaic, there was a lack of small coins, and a budget deficit made itself felt. The monetary reform was well designed. Novelties were introduced gradually, after considerable technical preparatory work done. At the close of the seventeenth century, Peter I made several visits to the mint of England headed at that time by Isaac Newton. At the inception phase starting from 1695, the construction of new mints, with machinery for producing round coins bought for them, was launched. The historian Alexander Yucht, who studied the currency circulation in the seventeenth century Russia, noted:

> The reform was implemented to a premeditated plan. After a certain step was made, they waited for the consequences and only then proceeded to the next stage. Thus, already since 1696 they had been producing dated silver kopecks, dating having been extremely rare before that. These dates … were intended, in a sense, to prepare the population for the forthcoming changes in the monetary sphere. After a few years, they started to introduce dated small copper coins (denezhki and polushki (quarter-kopeck coins)) and, since 1704, copper kopecks into circulation. The parallel issuance of similarly dated silver and copper coins was making the population accustomed to the equal value of both, contributing to strengthening confidence in copper money (Yukht, 1994, 15).

The reform did not intend to replace silver coins with copper ones. Red copper cost approximately 8 roubles at that time, the par value of a copper coin exceeded the cost of metal contained in it by 1.6 times from 1700, 1.9 times from 1701, and 2.5 times from 1704 till 1717. Finally, starting from 1717, they started to issue polushki and five-kopeck coins on the basis of spending a pound of copper on 40 roubles, so the difference between the nominal and the real value of money became more than fivefold, which put a strain on counterfeiting (Lamansky, 1854, 73–76). Before the exchange of 1730–1731, five-kopeck coins became the "Achilles' heel" of the Russian currency circulation. The issuance of copper money was to meet the needs in small change. In the period from 1700 till 1730, according to Yucht's estimates, silver, gold and copper accounted for 89.4%, 2.5% and 8.1% in the currency circulation correspondingly. It should be noted that a gradual approach to reforms shaped a new practice and contributed to strengthening confidence while taking the mistakes of the copper campaign of Alexei Mikhailovich into account increased hierarchical trust.

6 Conclusion

Fiduciary money holds a distinctive place in the history of monetary circulation. This is money based on trust and having no intrinsic value. The issuer's obligations play a decisive role. A theoretical motivation to introduce such money might be connected with a desire to increase money supply with a view to decreasing interest rates and encouraging lending and trade (Pribram, 1983, 73).

Before banknotes were introduced and the first European central banks—Swedish Riksbank (1688) and the Bank of England (1694)—were established, there had been very curious attempts to introduce fiduciary or fiat copper money. It seemed almost a miracle since equating copper with silver created "artificial wealth" 60–100 times exceeding the original value of copper. In this context, the short-term success and complete fiasco of the monetary campaign of Alexei Mikhailovich (1654–1663) in the Russian tsardom is of great interest. The major problem successfully solved by this monetary operation at the initial stage was the lack of funds to conduct military operations with Sweden and Poland. The map in Fig. 1 shows the results of the Andrusov Treaty of 1667, when the western territories around Smolensk, Chernigiv and Kyiv, previously making part of the Kingdom of Poland and the Grand Duchy of Lithuania, changed their jurisdiction.

The second problem the monetary campaign was trying to solve was the necessity to modernize the monetary system and saturate it with large and small denominations, in silver and copper. The poor preservation of the archives, the abundance of versions do not allow us to unambiguously determine the author of the projects. Most likely, Afanasy Lavrentievich Ordin-Nashchokin was involved in the project of issuing new copper money.

Technical malfunctions, archaic production methods, and a lack of merchant trust in the introduction of new, higher-denomination silver money led to the abandonment of a comprehensive change, which had initially aimed to mint seven silver and copper

distinct denominations. The whole campaign was narrowed down to issuing copper kopecks weighing 0.5 g and copying silver kopecks in all respects, with the exception of the material and internal value. Estimates regarding the quantity produced vary significantly, with the most optimistic suggesting that between 1655 and 1663, a staggering two billion of these copper kopecks were minted across four mints. However, this monetary reform has gone down in history as a complete failure, as evidenced by its cessation in 1663 and the buy-back rate of 100 to 1, implying that one silver kopeck was equivalent to 100 copper kopecks.

An examination of this monetary campaign reveals several discernible patterns related to the pivotal role of trust. During the initial phase of introducing the new currency, copper kopecks, as a substitute for silver, enjoyed a higher level of trust than silver roubles and efimki, with their enforced value surpassing that of the Bohemian thaler by 28–100%. Notably, copper and silver money exhibited analogous functionality during the first four years (1655–1658), a phenomenon attributed to the familiar appearance of the currency engendering trust. Subsequently, however, this trust and habit eroded due to factors like an increasing supply and government measures that discriminated against the new currency. Copper money encountered partial rejection in tax payments, and its use was prohibited in Siberia and in transactions with foreigners.

The initial trust, stemming from established practices and habits, impelled the monarch to adopt more assertive measures to augment seigniorage. Trust engendered erroneous expectations and fueled a rapid escalation in coin production. The monarch sought to curb counterfeiting more rigorously, control prices through centralized procurement, and enforce heightened surveillance and penalties. Ultimately, these innovations were abandoned, incurring significant costs for the population. Nevertheless, it is essential to consider that these monetary innovations achieved short-term success, aiding in deficit resolution and tax burden reduction. This perspective aligns with the institutional theory of money we employ, emphasizing the centrality of trust, and enables us, unlike the quantitative and state theories of money, to elucidate the nuanced dynamics, which, despite concluding unfavorably, encompassed a period of temporary prosperity.

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